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Hiromi Inagaki

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EXAMINER

BURCH, MELODY M

ART UNIT

PAPER NUMBER

3657

NOTIFICATION DATE

DELIVERY MODE

11/08/2011

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/593,190 | INAGAKI ET AL. | |
| | Examiner | Art Unit | |
| | MELODY BURCH | 3657 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 July 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) ☒ Claim(s) 1 and 3-7 is/are pending in the application.
- 5a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 6) ☐ Claim(s) ____ is/are allowed.
- 7) ☒ Claim(s) 1 and 3-7 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☒ The drawing(s) filed on 19 September 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the limitation of the guide grooves having a concavely curved cross sectional shape with a *diameter* that is equal to or larger than the *diameter* of the spheres must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. The figures show and the specification (paragraph [0084]) disclose otherwise.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claims 5 and 6 are objected to because of the following informalities: the phrase "lest" should be changed to --least-- for grammatical purposes. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1 and 3-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re: claim 1. The phrase "the guide grooves having a concavely curved cross-sectional shape with a *diameter* that is equal to or larger than the *diameter* of the spheres" is indefinite in light of the disclosure. Also see the above drawing objection.

Re: claim 3. In line 2 from the bottom of claim 3 the phrase "a forward movement" is indefinite. It is unclear to the Examiner whether Applicant intends to refer back to the previously recited forward movement initially recited in claim 1 or not.

Re: claim 7. The phrase "a tapered, forward-facing restricting step" in line 2 from the bottom is indefinite. It is unclear to the Examiner whether the step recited in claim 7 is intended to be the same or different from the step recited in claim 1.

The remaining claims are rejected due to their dependency from claim 1.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 3, 4, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP-57190903 (JP'903) in view of US Patent 4116307 to Reinecke and US Patent 3498188 to Rodriguez.

Re: claims 1 and 3. JP'903 shows in figures 1-3 a brake system comprising: a casing 10, 15 having a hollow bore formed therein; a piston 6 slidably fitted into the casing, the piston configured and arranged so that a brake state can be obtained by forward movement of the piston in the bore in response to a control fluid pressure acting on a rear face side of the piston, a lock mechanism 2 provided within the casing to the rear of the piston, the lock mechanism configured to automatically lock in response to forward movement of the piston in order to mechanically lock the piston at a forward position thereof, and to unlock in response to a release control fluid pressure acting on the lock mechanism; a fluid pressure source; and a fluid pressure controller for controlling a fluid pressure generated by the fluid pressure source so that the control fluid pressure and the release control fluid pressure can be obtained; wherein the lock mechanism comprises: a lock piston 16 that is slidably fitted into the casing to the rear of the parking piston 6, the lock piston arranged so that at least when the piston 6 moves

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forward a forward urging force acts on the lock piston and such that a release control pressure can act on the lock piston 16 toward the rear, a spring 22 provided in a compressed state between the casing and the lock piston 16 so as to urge the lock piston forwardly in the casing, a cylindrical retaining tube 8, 12 that is integrally and coaxially connected to a rear part of the piston, at least one sphere 13 that is respectively retained at a plurality of positions in the peripheral direction of the retaining tube so as to be moveable in a direction along the radial direction of the retaining tube, and an insertion shaft 16a that is connected integrally to the front end of the lock piston so as to be axially relatively movably inserted into the retaining tube in order to sandwich the at least one sphere between the insertion shaft and an inner face of the casing while contacting the at least one sphere from the inside of the retaining tube as shown in figures 2 and 3, the casing and the insertion shaft being formed so as to position the at least one sphere radially inward when the piston is at a retreat limit and to position the at least one sphere radially outward when the lock piston moves to a forward position in response to forward movement of the piston from the retreat limit, wherein the insertion shaft has a surface formed thereon and extending in the axial direction thereof, the surface being provided on the outer face of the insertion shaft, the surface having a shape so that part of each at least one sphere is rollably fitted onto the surface, and the casing having a restricting step 15c provided on the inner face thereof, the restricting step capable of abutting from the rear (as opposed to the forward part of the casing) against the at least one sphere pushed radially outward by the insertion shaft when the lock piston is at the forward position thereof.

JP'903 is silent with regards to the brake system being a parking brake environment.

Reinecke teaches in figure 3 the use of a parking brake system comprising a lock mechanism.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the brake system of JP'903 to have been a parking brake system, as taught by Reinecke, in order to provide a means of providing braking on steep inclines and maintaining braking during long stationary periods.

JP'903 is silent with regards to the at least one sphere being a plurality of spheres.

With regards to the plurality of spheres, in *In re Harza*, 274 F.2d 669, 124 USPQ 378 (CCPA 1960) the court held that mere duplication of parts has no patentable significance unless a new and unexpected result is produced.

JP'903, as modified, is silent with regards to the outer face of the insertion shaft having concave curved cross sectional shapes as recited.

Rodriguez teaches in figures 1A and 1B the use of an outer face of an insertion shaft having concave curved cross sectional shapes as recited.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the outer face of the insertion shaft of JP'903, as modified, to have included concave curved cross sectional shapes as recited, as taught by Rodriguez, in order to provide a means of guiding the radial movement of the spheres to effect locking and releasing.

Re: claim 4. JP'903, as modified, teaches in figures 1-3 the limitation wherein the lock piston 16 integrally includes a small diameter portion shown radially within the unlabeled seal slidably fitted into the casing and a large diameter portion shown to the right of the small diameter portion coaxially connected to a rear part of the small diameter portion while forming a forward facing annular step between the large diameter portion and a rear portion of the small diameter portion.

Re: claim 7. JP'903, as modified, teaches in figures 1-3 the limitation wherein the casing bore includes a slide hole surrounding element 6 having a first diameter which slidably receives a portion of the parking piston 6 and a guide hole surrounding element 12 coaxially connected to the slide hole and having a second diameter which is smaller than the first diameter the guide hole configured to slidably receive the retaining tube 8, 12 therein, wherein a tapered forward facing restricting step shown in the area surrounding the unlabeled seal under the arched portion of the lead line of number 11 is formed in the casing bore between the guide hole and the slide hole.

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP-57190903 (JP'903) in view of US Patent 4116307 to Reinecke and US Patent 3498188 to Rodriguez as applied to claim 4 above, and further in view of US Patent 3944027 to Yamamoto.

JP'903, as modified, includes the limitation wherein at least one annular seal (unnumbered shown to the left of the lead line of 16) is mounted on an outer periphery of the small diameter portion of the lock piston 16 but is silent with regards to at least

one annular seal being mounted on the outer periphery of the large diameter portion of the lock piston.

Yamamoto teaches in figure 1 the limitation wherein a piston includes a seal 44 mounted on an outer periphery of a small diameter portion and at least one seal 66 mounted on the outer periphery of a large diameter portion of the lock piston.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the large diameter portion of the lock piston of JP'903, as modified, to have included at least one annular seal, as taught by Yamamoto, in order to provide a means of achieving the appropriate pressure by preventing fluid leakage.

Double Patenting

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422

F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claim 1 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 7651175 to Inagaki et al. in view of JP' 903. Both claim 1 of the patent and claim 1 of the instant invention claim a parking brake system comprising a casing, a parking piston, a lock mechanism, a fluid pressure source, a fluid pressure controller or means, the lock mechanism comprising a lock piston, a cylindrical retaining tube, a plurality of spheres, insertion shaft, guide grooves, and a restricting step, but the patent claim is silent with regards to a spring being provided in a compressed state between the casing and the lock piston so as to urge the lock piston forwardly in the casing.

JP'903 teaches in figures 1-3 the use of a spring 22 provided in a compressed state between the casing and the lock piston so as to urge the lock piston forwardly in the casing.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the parking brake system of the patent claim to have included a spring, as taught by JP'903, in order to provide a means of urging the lock piston forwardly in the casing to facilitate reaching the locked position.

Allowable Subject Matter

10. Claim 6 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Response to Arguments

11. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MELODY BURCH whose telephone number is (571)272-7114. The examiner can normally be reached on Monday-Friday (6:30 AM-3:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi can be reached on 571-272-7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

mmb

November 2, 2011

/Melody M. Burch/

Primary Examiner, Art Unit 3657